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JAS-ANZ
ISO 9001:2000 CERTIFIED

Job No.: CQCE/BBMP/MY/W.No.12/2019-20

Date: 16.12.2019

TEST REPORT

Client	:	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	:	**Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.
Name of the work	:	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore.
Date of testing	:	16.12.2019

The results of the tests conducted on the bitumen sample using for Open Graded Premix surface

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	85	80 to 100
2	Softening point, ^{0}C	49	Min. 45
3	Ductility at 27^{0}C, cm	100 >	Min. 50
4	Flash Point, ^{0}C	296	Min. 220

Note:

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For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Office & Laboratory : # 133, Bhuvaneshwarinagar, Dodda Basti Main Road, Bangalore - 560 056.
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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date: 16.12.2019

Aggregate Impact Value

IS: 2386 Part IV

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
Name of the Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Open Graded Premix surface
Date of Testing	16.12.2019

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	295	295	
4	Aggregate Impact value = percent fines 100* (W_2/W_1) percent	22.37	22.77	22.57

Comments:
→ Maximum allowable Aggregate Impact value for OGPS is 30%

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18.12.2019

Job No: CQCE/BBMP/MY/W.No.12/2019-20

BITUMEN CONTENT AND GRADATION DETERMINATION OF OPEN GRADED PREMIX SURFACE

AASHTO T 164 & AASHTO T 30

CLIENT	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
NAME OF THE WORK	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	18.12.2019

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted, g	25	26
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	25	26
7. Bitumen content in %	5.00	5.20
8. Average	**5.10**	

GRADATION AFTER EXTRACTION

TABLE - 1

Sieve size in mm	Percent Passing, %		Specified Limits as per MORTH specification
	Sample 1	Sample 2	
13.2	100.00	100.00	100
11.2	95.6	96.8	88-100
5.6	45.5	46.2	31-52
2.8	18.9	19.5	5.-25
0.09	4.2	3.8	0-5

Note:

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Job No: CQCE/BBMP/MY/W.No.12/2019-20 18.12.2019

BITUMEN CONTENT AND GRADATION DETERMINATION OF OPEN GRADED PREMIX SURFACE

AASHTO T 164 & AASHTO T 30

CLIENT	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
NAME OF THE WORK	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	18.12.2019

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	475
3. Weight of Asphalt and Mineral matter Extracted, g	25.5	25
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25
7. Bitumen content in %	5.10	5.00
8. Average	**5.05**	

GRADATION AFTER EXTRACTION

TABLE - 1

Sieve size in mm	Percent Passing, %		Specified Limits as per MORTH specification
	Sample 1	Sample 2	
13.2	100.00	100.00	100
11.2	95.6	96.8	88-100
5.6	35.9	34.6	31-52
2.8	18.9	19.4	5.-25
0.09	3.5	4.2	0-5

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date: 20.12.2019

TEST REPORT

Client	:	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	:	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
Name of the work	:	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Date of testing	:	20.12.2019

The results of the tests conducted on the bitumen sample using for Semi Dense Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	89	80 to 100
2	Softening point, ^{0}C	48	Min. 45
3	Ductility at 27^{0}C, cm	100 >	Min. 50
4	Flash Point, ^{0}C	302	Min. 220

Note:

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date: 20.12.2019

Aggregate Impact Value

IS: 2386 Part IV

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
Name of the Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	20.12.2019

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	377	379	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	84	85.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	295	295	295.5	
4	Aggregate Impact value = percent fines $100^* (W_2/W_1)\%$	21.75	22.16	22.44	**22.12**

Comments:
→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20

Date: 20.12.2019

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
Name of Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	20.12.2019

Result : Flakiness Index = **12.58%**

Elongation Index = **13.98%**

Result : Combined Flakiness & Elongation index **26.56%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

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20.12.2019

Job No.: CQCE/BBMP/MY/W.No.12/2019-20

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (M/s. Professional global infrastructure privited limited),** Bangalore.
Name of the Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Medarahalli village RR College surrounding area in ward no.12, Shettyhalli sub division, PKG-03, BBMP, Bangalore.
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	20.12.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2024	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1265	1267	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2016	2018	2020	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	751	751	751	
6	Weight of oven dried aggregate	W_4 g	2008	2009	2010	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.674	2.675	2.676	2.675
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.703	2.708	2.713	2.708
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.40%	0.45%	0.50%	0.45%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

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